

Fertometer measures plants' hunger

The roots of plants growing in the ground will grow in every direction, in search of nutrients. Potted plants however have to find their nutrients in the tiny bit of soil in which they are planted. Approved retail potting soil contains fertiliser. Over time, this fertiliser runs out, and these nutrients must be added back into the soil. Until recently, there were no means available to consumers for measuring the quantity of nutrients in soil.

Professional nurseries have been using the EC meter for years. This meter measures the conductivity of the soil (Electrical Conductivity, or EC), in order to measure the quantity of nutrients (ions) present for the plant roots to absorb. Wouldn't it be great if consumers had an easy way to determine the situation with the nutrients in their own potted plants at home?

Marius de Rijke is a grower of geraniums (*Pelargonium*) and other summer-blooming potted plants in the French Dordogne region. He also happens to be an electrical engineer. Marius de Rijke developed a simple EC meter for home use: the Fertometer. This measuring instrument was recently introduced on the market.

The Fertometer is extremely simple to use: you simply drive the metal pin into the soil in the pot and press the button. There are three light indicators on the meter. One of these will light up. If the yellow light is illuminated, then the potted plant is suffering from a nutrient deficiency and fertiliser is necessary. If the green light is illuminated, then there are sufficient nutrients in the soil. If the red light is illuminated, then adding fertiliser is NOT advisable. This means that there is more than enough fertiliser in the soil.

Tested and endorsed

The Dutch plant magazine, *Groei & Bloei* tested the Fertometer.

Test 1

We filled three pots with seeding and cutting soil (which does not contain fertiliser). We soaked the first pot in pure tap water. When measured with the Fertometer, the yellow light lit up, indicating undernourishment. For the second pot, we added the recommended quantity of a composite fertiliser to the tap water. The Fertometer detected the increase in the nutrient ions, and measured it. The green light lit up. There appeared to be sufficient nutrients in the soil. We soaked the third pot with a double dosage of the fertiliser. The Fertometer detected the higher value flawlessly. The red light lit up.

Test 2

The second test demonstrated that the Fertometer is also capable of measuring plants' consumption of nutrients. We used two pots of equal volume. We put one pepper plant in one of the pots. We placed three similar pepper plants in the other pot. Both pots received the same amount of fertiliser. The yellow 'deficiency' light lit up much sooner in the pot with the three plants, as a sign that the three plants had 'gobbled up' the available nutrients much sooner.

Test 3

We conducted the same test with another (larger) pepper variety simultaneously. It was very easy for us to determine from the consumption that the larger plants, with many leaves, got 'hungry' a lot sooner than the smaller pepper varieties. Tests 2 and 3 indicated that rapidly growing plants with many leaves consume more nutrients and must therefore be more heavily fertilised.

Test 4

Does it matter which fertiliser you use? Can the Fertometer measure the effects of different types of fertilisers? Once again, we used pots of equal size, with similar plants. We fertilised one pot with liquid artificial fertiliser (N7+P5+K7 and trace elements), and the other with organic fertiliser from the same supplier (N4+P0+K5). Although the organic fertiliser contains much lower levels of nutritive salts, the manufacturer indicated that you should use

exactly the same amount of the fertiliser (10 milliliters per liter of water). To our surprise, the plants fed with the stronger artificial fertiliser appeared to become 'hungry' again after a few days (the yellow light lit up again). With the plants fed the organic fertiliser, the green light on the Fertometer remained lit up for a long time afterwards. This test showed that organic fertiliser works better, or at any rate, for consumers.

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